

Name: _____

Date: _____

Exam: Function Reflections (Practice version 12)

1. Let function f be defined by the polynomial below:

$$f(x) = 3x^5 - 8x^4 + 4x^3 - 6x^2 + 2x - 9$$

Draw lines that match each function reflection with its polynomial:

Reflections

Polynomials

$-f(x)$ ●

● $-3x^5 + 8x^4 - 4x^3 + 6x^2 - 2x + 9$

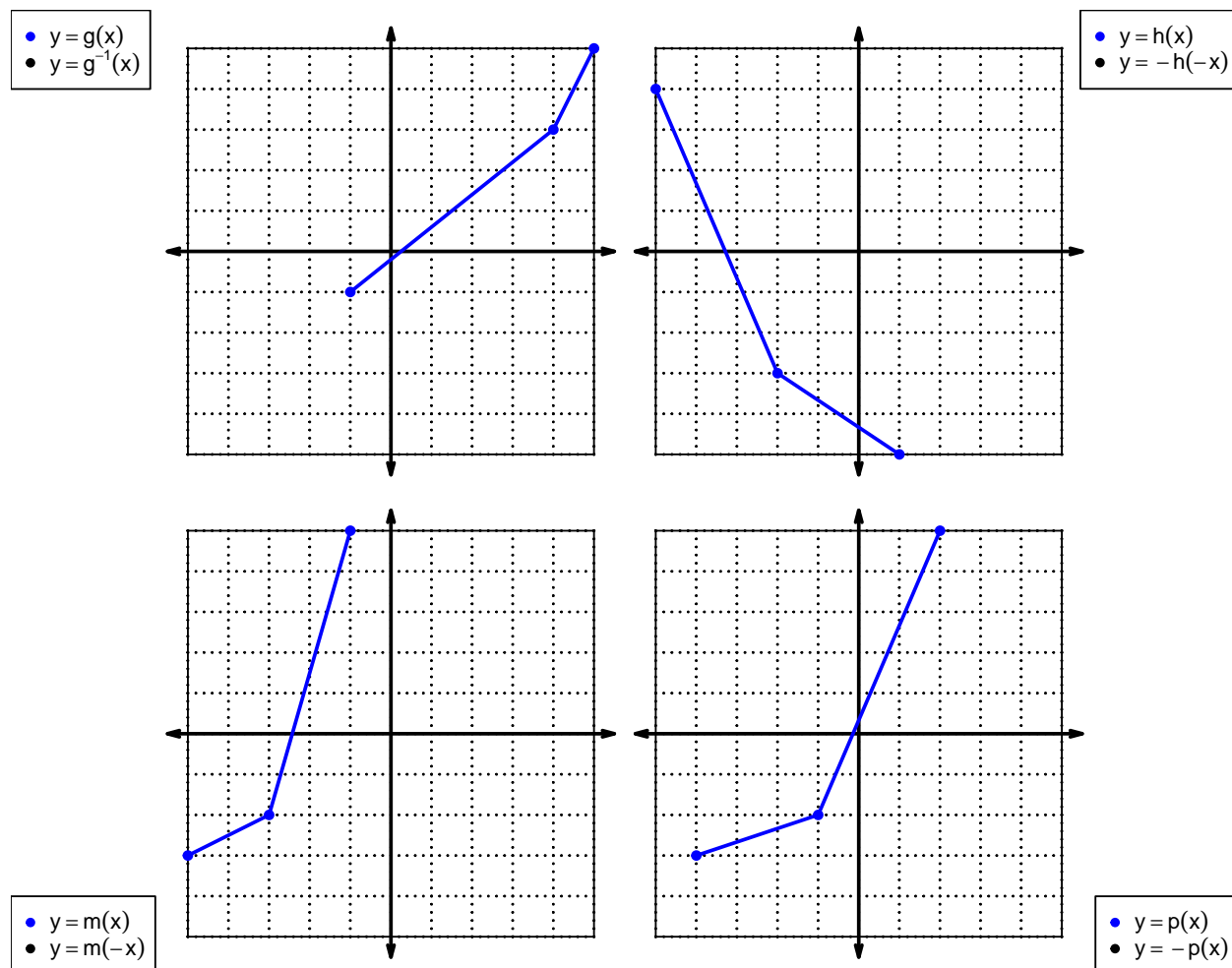
$-f(-x)$ ●

● $-3x^5 - 8x^4 - 4x^3 - 6x^2 - 2x - 9$

$f(-x)$ ●

● $3x^5 + 8x^4 + 4x^3 + 6x^2 + 2x + 9$

2. In each xy plane shown below, a function is graphed with blue. Draw the indicated reflections (as a second curve, indicated in legend) with black (or with whatever you have). The x axis is horizontal and the y axis is vertical (as typical), and the scale is equal on both axes.



Exam: Function Reflections (Practice version 12)

For all questions on this page, the functions f , g , and h are defined by the table below.

x	$f(x)$	$g(x)$	$h(x)$
1	9	6	4
2	1	3	7
3	2	8	1
4	5	7	3
5	3	9	8
6	4	5	5
7	8	2	6
8	6	1	9
9	7	4	2

3. Evaluate $h(7)$.

4. Evaluate $g^{-1}(4)$.

5. By filling more rows of the table, it is possible to make function g **even**. If that were done, what would be the value of $g(-8)$?

6. By filling more rows of the table, it is possible to make function f **odd**. If that were done, what would be the value of $f(-5)$?

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7. A function, f , is **even** if $f(x) = f(-x)$ for all x in the domain. A function, g , is **odd** if $g(x) = -g(-x)$ for all x in the domain.

Let polynomial p be defined with the following equation:

$$p(x) = x^3 + x$$

- a. Express $p(-x)$ as a polynomial in standard form.

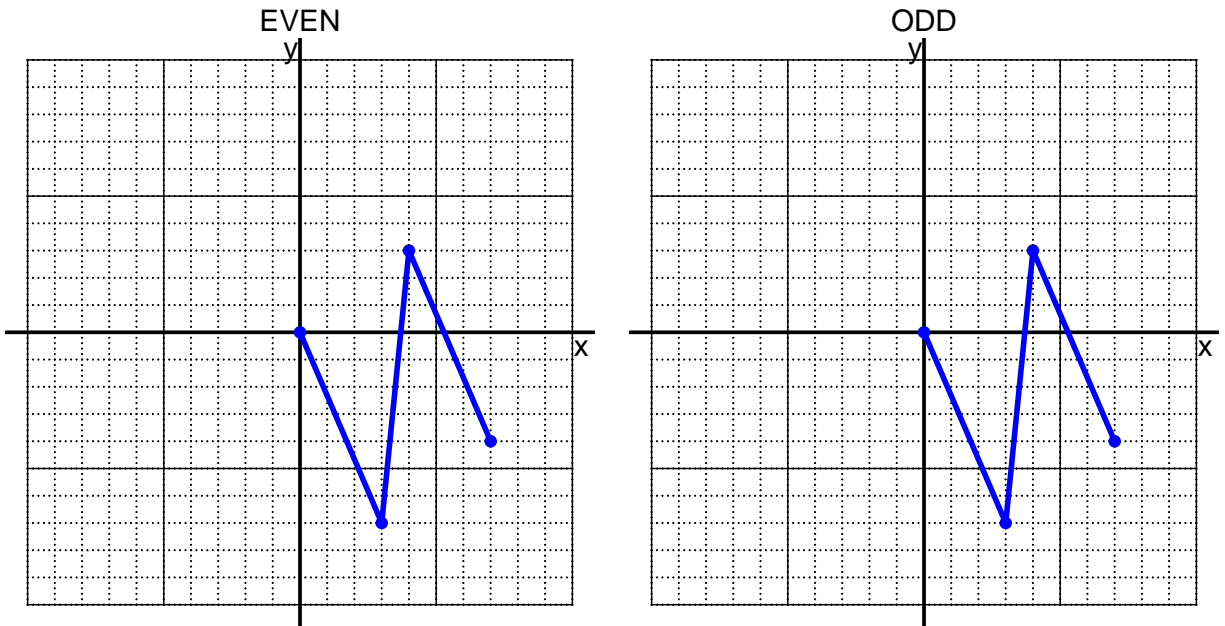
- b. Express $-p(-x)$ as a polynomial in standard form.

- c. Is polynomial p even, odd, or neither?

- d. Explain how you know the answer to part c.

Exam: Function Reflections (Practice version 12)

8. I have drawn half of a function. Draw the other half to make it even or odd.



9. Let function f be defined with the equation below.

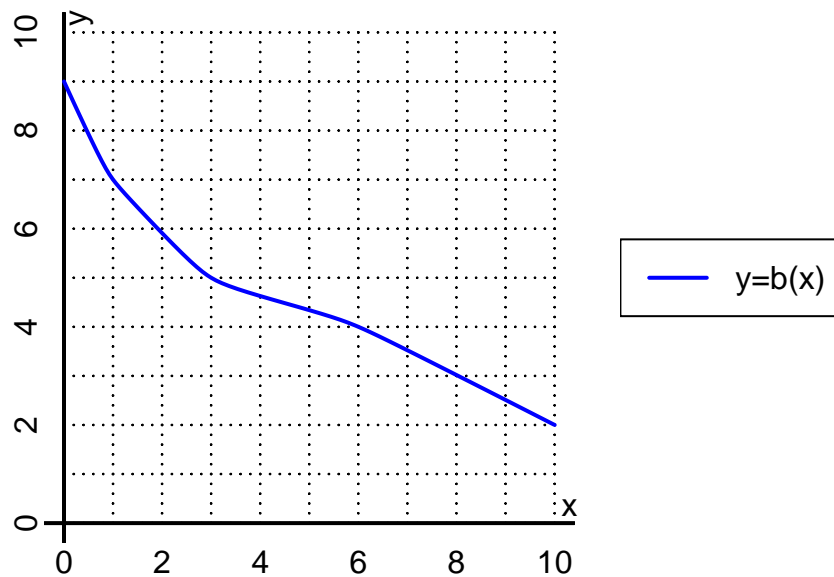
$$f(x) = 9x + 3$$

- a. Evaluate $f(10)$.

- b. Evaluate $f^{-1}(66)$.

Exam: Function Reflections (Practice version 12)

10. The function b is represented by the curve $y = b(x)$ graphed below.



a. Evaluate $b(6)$.

b. Evaluate $b^{-1}(5)$.

Exam: Function Reflections (Practice version 12)

11. Function f is defined by the table below.

a. Complete the columns for $-f(x)$ and $f(-x)$ and $-f(-x)$.

x	$f(x)$	$-f(x)$	$f(-x)$	$-f(-x)$
-2	-3			
-1	5			
0	0			
1	5			
2	-3			

b. Is function f even, odd, or neither?

c. How do you know the answer to part b?